US Army Medical Research and Materiel

Technology Available for Licensing

Method for Monitoring Arterial Oxygen Saturation

Features and advantages:

- **Could provide effective method for taking pulse oximetry measure-ments from capillary beds**
- **Could be easily used in the field during emergency situations**
- **Reduces likelihood of burning subject, as less power required and less heat produced**

This invention provides a method for monitoring arterial oxygen saturation by taking reflectance oximeter readings within the nasal or oral cavity and down through the posterior pharynx, and contacting a capillary bed disposed in the cavity with the reflectance pulse oximeter sensor. The sensor is preferably resistant to bodily fluids in the capillary beds where the readings are taken. The sensor then forwards the readings to an oximeter for display.

Conventional pulse oximetry in the severely burned patient can be a significant challenge, yet this monitoring data is vital in operating room and intensive care settings. Most current oximetric approaches depend upon available peripheral sites permitting transillumination oximetry. Unfortunately, patients with severe burns often have few sites for the effective placement of the transilluminating pulse oximeter sensor. In addition, these patients often have severely compromised blood circulation in their bodies, rendering the peripheral pulse oximeter less efficient.

Studies have shown that oral pulse oximeters are more reliably and rapidly responsive than peripheral pulse [illegible]rs. However, these studies use oral transillumination pulse oximetry, held in place via complex devices or pieces of improvised malleable metal. Oral secretions, equipment failure, and placement often render these techniques ineffective. Buccal and proximal posterior pharyngeal/palatal reflectance pulse oximetry provide a simple, accurate means of monitoring arterial oxygen saturation.

Patent Status

Patent No.: 6,263,223 **Available from:** www.uspto.gov

Issued: July 17,2001 **Docket No.:** ISR 99-31

Point of Contact

Dr. Paul C. Mele
Director, Office of Research and Technology Applications
USAMRMC, MCMR-ZA-J
504 Scott St., Ft. Detrick, MD 21702-5012
E-mail: usamrmcorta@amedd.army.mil
Voice: 301-619-6664/2065/7219 Fax: 301-619-5034

KEYWORDS: Alternative oximetry; nasal; reflectance oximetry; difficult to monitor;l central oximetry

Licensing Opportunities • Patent licenses are available to companies with commercial interests